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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/822,539 | 03/30/2001 | Priya Govindarajan | 042390.P10459 | 7662 |

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|---|---|

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| EXAMINER |
|---|
| CASIANO, ANGEL L |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2182 | |

DATE MAILED: 07/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

> A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
> THE MAILING DATE OF THIS COMMUNICATION.
> - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
>   after SIX (6) MONTHS from the mailing date of this communication.
> - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
> - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
> - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
>   Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
>   earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on _30 March 2001_.

2a)☐ This action is **FINAL**.     2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is

closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) _1-20_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-20_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _30 March 2001_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All  b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage

        application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _20010525_.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

## DETAILED ACTION

The present Office action is in response to application dated 30 March 2001.

Claims 1-20 are pending in the application.

### *Information Disclosure Statement*

1.      The information disclosure statement (IDS) submitted on 25 May 2001 was filed after the
mailing date of the application on 30 March 2001.  The submission is in compliance with the
provisions of 37 CFR 1.97.  Accordingly, the information disclosure statement is being
considered by the examiner.

### *Drawings*

2.      The drawings are objected to because black boxes (see Figure 1) should be labeled as to
their function.  Corrected drawing sheets are required in reply to the Office action to avoid
abandonment of the application.  Any amended replacement drawing sheet should include all of
the figures appearing on the immediate prior version of the sheet, even if only one figure is being
amended.  The figure or figure number of an amended drawing should not be labeled as
"amended."  If a drawing figure is to be canceled, the appropriate figure must be removed from
the replacement sheet, and where necessary, the remaining figures must be renumbered and
appropriate changes made to the brief description of the several views of the drawings for
consistency.  Additional replacement sheets may be necessary to show the renumbering of the
remaining figures.  The replacement sheet(s) should be labeled "Replacement Sheet" in the page

header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 102*

3.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.      Claims 1-2, 6-7, 10-11, 14 and 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Nelson et al. [US 5,835,720].

Regarding claim 1, Nelson et al. teaches a method including the steps of identifying a second network device at a first network device  (see Abstract); sending a message from the first network device to the second network device, the message establishing the identity of any network device between the first network device and the second network device (see col. 1, lines 58-67); compiling the established identities to determine the topology of the network (see col. 2, lines 24-32).

As for claim 2, the reference teaches identifying a network device by receiving an address for another device (see col. 2, lines 10-16).

As per claim 6, Nelson et al. explicitly teaches executing a Traceroute utility to determine the route of a packet (see col. 9, line 58).

As for claim 7, Nelson et al. teaches a method including the steps of identifying a network device at a given network device (see Abstract); as well as sending a message from a network device to another network device, the message establishing the identity of any network device between the devices (see col. 1, lines 58-67); compiling the established identities to determine the topology of the network (see col. 2, lines 24-32).

Regarding claims 10-11 and 14, these correspond to the machine-readable medium having stored thereon data representing sequences of instructions corresponding to the method previously rejected in the present Office action. These claims are rejected under the same basis.

Regarding claim 16, Nelson et al. teaches a method including the steps of identifying a second network device at a first network device (see Abstract); sending a Traceroute message from the first network device to the second network device, the message establishing the identity of any network device between the first network device and the second network device (see col. 1, lines 58-67; col. 9, line 58); compiling the established identities to determine the topology of the network (see col. 2, lines 24-32).

As for claim 17, the reference teaches identification of a network device by receiving an address

for another device (see col. 2, lines 10-16).

### Claim Rejections - 35 USC § 103

5.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
>
> described as set forth in section 102 of this title, if the differences between the subject
>
> matter sought to be patented and the prior art are such that the subject matter as a whole
>
> would have been obvious at the time the invention was made to a person having ordinary
>
> skill in the art to which said subject matter pertains. Patentability shall not be negatived
>
> by the manner in which the invention was made.

6.      Claims 3-4, 8, 12, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Nelson et al. [US 5,835,720].

As per claim 3, Nelson et al. teaches sending a packet from a network device, having an interface

to an address of the second network device and selecting an interface that corresponds to any

reply received from the second network device (see Abstract; col. 3, lines 31-39, 60-61; col. 6,

lines 2-5). Although the prior art does not literally cite a "network device" having "a plurality of

network interfaces", it does suggest a variety of network devices (see col. 2, lines 66-67).

Accordingly, it would have been obvious to one of ordinary skill in the art that the devices suggested by Nelson et al. would have included a plurality of interfaces (e.g. "hubs").

As for claim 4, the reference explicitly teaches sending a PING packet from a device (see Abstract, claims).

As per claim 8, Nelson et al. teaches sending a packet from a network device to another network device (see Abstract; col. 3, lines 31-39, 60-61; col. 6, lines 2-5). Although the prior art does not literally cite a "third network device" it does suggest a variety of network devices (see col. 2, lines 66-67) as part of the cited method. Accordingly, it would have been obvious to one of ordinary skill in the art that the devices suggested by Nelson et al. would have included a plurality of ports (e.g. "hubs"). In addition, the reference compiles the identified addresses (see col. 3, lines 39-44).

As for claims 12 and 15, these correspond to the machine-readable medium having stored thereon data representing sequences of instructions corresponding to the method previously rejected in the present Office action. These claims are rejected under the same rationale.

As per claim 18, Nelson et al. teaches sending a packet from a network device, having an interface to an address of the second network device and selecting an interface that corresponds to any reply received from the second network device (see Abstract; col. 3, lines 31-39, 60-61; col. 6, lines 2-5). Although the prior art does not literally cite a "network device" having "a

plurality of network interfaces", it does suggest a variety of network devices (see col. 2, lines 66-67). Accordingly, it would have been obvious to one of ordinary skill in the art that the devices suggested by Nelson et al. would have included a plurality of interfaces (e.g. "hubs"). The reference explicitly teaches sending a PING packet from a device (see Abstract, claims).

7.       Claims 5, 13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson et al. [US 5,835,720] in view of Aggarwal et al. [US 5,675,741].

As per claim 5, Nelson et al. does not explicitly teach a method, wherein the step of sending the message comprises sending a plurality of messages to the second network device, each message having an *incrementally* greater time to live until a message reaches the second network device. Regarding this limitation, Aggarwal et al. teaches a method in a computer network communication system, where a packet has an incrementing TTL (time-to-live) value (see col. 2, lines 42-47). At the time of the invention, one of ordinary skill in the art would have been motivated to combine the cited disclosures in order to obtain a communication method where a route is successfully traced from any source to any destination regardless of whether one router is known (see Aggarwal).

As for claim 13, this corresponds to the machine-readable medium having stored thereon data representing sequences of instructions corresponding to the method previously rejected in the present Office action. Therefore, this claim is rejected under the same rationale.

As per claim 19, Nelson et al. does not explicitly teach a method, wherein the step of sending the message comprises sending a plurality of messages to the second network device, each message having an *incrementally* greater time to live until a message reaches the second network device. Regarding this limitation, Aggarwal et al. teaches a method in a computer network communication system, where a packet has an incrementing TTL (time-to-live) value (see col. 2, lines 42-47). At the time of the invention, one of ordinary skill in the art would have been motivated to combine the cited disclosures in order to obtain a communication method where a route is successfully traced from any source to any destination regardless of whether one router is known (see Aggarwal).

8.      Claims 9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson et al. [US 5,835,720] in view of Aggarwal et al. [US 5,675,741] in further view of Fishler [US 6,507,646 B1].

As for claim 9, the combination of references (Nelson et al. in view of Aggarwal et al.) teaches a method where a network device sends a message identifying an address. In addition, the reference teaches identifying an address corresponding to the port and further compiling the identified address (see Aggarwal et al., col. 1, lines 62-67; col. 2, lines 48-60). However, the combination of references does not teach sending a packet to a port that does not exist in order to provoke a device to send an error message. Regarding this limitation, Fishler teaches error reporting protocol as part of a communication method (see col. 7, lines 39-55). Fishler teaches implementing this protocol as part of ICMP (Internet Control Message Protocol). Accordingly,

one of ordinary skill in the art would have been motivated to modify the combination of references in order to implement an error reporting message, since the cited combination teaches the use of ICMP protocol.

As per claim 20, the combination of references (Nelson et al. in view of Aggarwal et al.) teaches a method where a network device sends a message identifying an address. In addition, the reference teaches identifying an address corresponding to the port and further compiling the identified address (see Aggarwal et al., col. 1, lines 62-67; col. 2, lines 48-60). However, the combination of references does not teach sending a packet to a port that does not exist in order to provoke a device to send an error message. Regarding this limitation, Fishler teaches error reporting protocol as part of a communication method (see col. 7, lines 39-55). Fishler teaches implementing this protocol as part of ICMP (Internet Control Message Protocol). Accordingly, one of ordinary skill in the art would have been motivated to modify the combination of references in order to implement an error reporting message, since the cited combination teaches the use of ICMP protocol.

## *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angel L. Casiano whose telephone number is 703-305-8301. The examiner can normally be reached on 9:30-6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 703-308-3301. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

alc
21 July 2004.

JEFFREY GAFFIN
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